

Application No. 10/808,827

Reply to Office Action

*REMARKS/ARGUMENTS***RECEIVED**
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OCT 12 2006*The Pending Claims*

Claims 1-4 and 7-23 currently are pending. Claims 1-4 and 7-21 are directed toward a polishing pad. Claims 22 and 23 are directed toward a method of polishing with the aforementioned polishing pad. Reconsideration of the claims is respectfully requested in view of the remarks herein.

Summary of the Office Action

Claims 1 and 7-23 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent Application Publication 2003/0190864 A1 (Lehman et al.) (hereinafter "the Lehman publication"). Claims 2-4 stand rejected under 35 U.S.C. § 103(a) as allegedly obvious over the Lehman publication in view of U.S. Patent 6,168,508 B1 (Nagahara et al.) (hereinafter "the Nagahara patent").

Discussion of the Anticipation Rejections

The Office Action rejects claims 1 and 7-21 as allegedly anticipated by the Lehman publication. Specifically, the Office Action asserts that the Lehman publication discloses a chemical-mechanical polishing pad comprising a polishing layer and including an endpoint detection port, a hydrophobic region and a hydrophilic region. The Office Action further asserts that the hydrophobic region allegedly disclosed by the Lehman patent is adjacent to the endpoint detection port and completely surrounds that port. Applicant respectfully traverses the anticipation rejection of claims 1 and 7-21 for the reasons set forth below.

To anticipate a claim, the cited reference must teach each and every element of that claim. M.P.E.P. § 2131. "The identical invention must be shown in as complete detail as is contained in the claim." *Id.* (citation omitted). Contrary to the Office Action's assertions, the Lehman publication does not anticipate the pending claims because it fails to disclose every element of those claims. In particular, the cited reference fails to disclose a hydrophobic region that is adjacent to and completely surrounds the endpoint detection port.

The Office Action asserts that the Lehman publication discloses a hydrophobic region "located adjacent to said endpoint detection port which completely surrounds the endpoint

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detection port" (Office Action, page 3). Applicant respectfully disagrees. Nothing in the Lehman publication discloses a hydrophobic region that is adjacent to and completely surrounds the endpoint detection port. Indeed, the Office Action fails to particularly point out where such a disclosure can be found in the Lehman publication. The portions of the Lehman publication that the Office Action does generally refer to as disclosing a hydrophobic region fail to disclose this element of the pending claims.

The Office Action generally refers to paragraph 89 of the Lehman publication as disclosing "a hydrophobic region being formed from a group consisting of polybutadiens, polyethylenes, polystyrenes and combinations thereof" (Office Action, page 2). While this portion of the cited reference does disclose the existence of a hydrophobic region, it does not disclose that the hydrophobic region is adjacent to and completely surrounds the endpoint detection port (*see* para. 88-90).

The Office Action also generally refers to item 194, as shown in Figure 1e of the Lehman publication, as identifying a hydrophobic region (Office Action, page 2). While the Lehman publication indicates that "membrane 194 may be configured to surround window [endpoint detection port] 182" (para. 0096), the Lehman publication discloses that "[t]he membrane may be formed of a polyurethane," which is a hydrophilic (not hydrophobic) material. Therefore, not only does the cited reference fail to disclose a hydrophobic region that is adjacent to and completely surrounds the endpoint detection point, it actually discloses the exact opposite.

Therefore, the subject matter of pending claims 1 and 7-21 cannot properly be considered anticipated by the Lehman publication. Applicant respectfully requests that the anticipation rejection of claims 1 and 7-21 be withdrawn.

The Office Action similarly rejects claims 22 and 23 as allegedly anticipated by the Lehman publication. Specifically, the Office Action asserts that the Lehman publication inherently discloses a method of polishing a substrate including steps identical to those of the pending claims. Applicant respectfully traverses the anticipation rejection of claims 22 and 23 for the same reasons discussed above with respect to the anticipation rejection of claims 1 and 7-21, as well as the additional reasons set forth below.

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An anticipation rejection may be proper even though a certain characteristic of the claimed invention is not explicitly disclosed in the cited reference so long as that characteristic is inherent within the cited reference. M.P.E.P § 2131.01. However, “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic ... extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill in the art.” M.P.E.P § 2112. It is the examiner’s duty to “provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Id.*

The Office Action conclusively states that the Lehman publication “inherently disclose[s] a method of polishing a substrate” and lists the four method steps exactly as they appear in pending claims 22 and 23. Applicant respectfully disagrees with the Office Action’s assertion. Neither the Lehman publication nor any extrinsic evidence establishes that the missing descriptive matter is inherently or necessarily present in the cited reference. The Office Action fails to support its conclusion with evidence or reasoning.

Because the Lehman publication fails to expressly or inherently disclose each element of pending claims 22 and 23, the subject matter of those claims cannot properly be considered anticipated by the Lehman publication. The anticipation rejection of claims 22 and 23 should be withdrawn.

Discussion of the Obviousness Rejection

The Office Action rejects claims 2-4 as allegedly encompassing obvious subject matter over the Lehman publication in view of the Nagahara patent. Applicant respectfully traverses the obviousness rejection of claims 2-4 for the reasons set forth below.

To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) the prior art references must teach or suggest all of the claim limitations, (2) there must be some suggestion or motivation, available to one of ordinary skill in the art, to combine reference teachings, and (3) there must be a reasonable expectation of success. The teaching or suggestion to make the claimed invention must be found in the prior art, and may not be

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based on Applicants' disclosure. *See e.g.*, M.P.E.P. § 2143. Applicant respectfully traverses the obviousness rejection of claims 2-4 for two reasons: (1) the combination of cited references fails to teach or suggest all of the limitations of the pending claims and (2) the prior art provides no motivation to lead a person of ordinary skill in the art to combine the cited references so as to arrive at the subject matter of the rejected claims. Contrary to the Office Action's assertions, therefore, the invention defined by the pending claims is not obvious over the combination of the disclosures of the Lehman publication and the Nagahara patent.

First, the combination of references fails to teach or suggest all of the claim limitations. Claims 2-4 depend upon claim 1, which requires a hydrophobic region that is adjacent to and completely surrounds an endpoint detection port. Because the references fail to teach or suggest the use of a hydrophobic region adjacent to and completely surrounding an endpoint detection port, the subject matter of pending claims 2-4 is not obvious over those references. As discussed above with respect to the anticipation rejections, the Lehman publication not only fails to disclose a hydrophobic region adjacent to and completely surrounding an endpoint detection port, but rather, if anything, teaches that the endpoint detection port is surrounded by hydrophilic material. Further, as Applicant pointed out in the response to the Office Action dated March 2, 2006, nothing in the Nagahara patent teaches or suggests an endpoint detection port. The Office Action does not dispute Applicant's assertion (*see* Office Action, page 4). Because the Lehman publication and the Nagahara patent, both alone and in combination, fail to teach or suggest every element of the pending claims, the obviousness rejection is improper and should be withdrawn.

Second, the Office Action fails to point to any motivation that would lead a person of ordinary skill in the art to combine the cited references. The Nagahara patent pertains to general problems associated with polishing and does not address the use of endpoint detection ports. The Nagahara patent claims a polishing surface that includes different regions with varying physical properties (col. 1, lines 5-14; cols. 11-12). By exposing the substrate to these different regions during polishing, the Nagahara patent hopes to achieve more uniform polishing and a more planar surface (col. 1, lines 5-14). As discussed above, nothing in the Nagahara patent addresses problems associated with endpoint detection. Therefore, there is nothing to motivate a person of ordinary skill in the art to combine its

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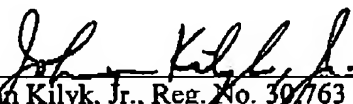
teachings with those of the Lehman publication. The suggestion and benefits of completely surrounding an endpoint detection port with a hydrophobic region are provided only by Applicant's disclosure accompanying the pending claims. Therefore, to conclude that the pending claims are obvious over the combination of the Lehman publication and the Nagahara patent is to make improper use of hindsight on viewing the disclosure accompanying the pending claims.

In view of the foregoing, the Lehman publication and the Nagahara patent fail to teach or suggest all of the elements recited in the pending claims. Moreover, the Office Action fails to point to any suggestion that would have motivated one of ordinary skill to combine the cited references. For either reason, the subject matter of the pending claims cannot properly be considered obvious over the cited references, and the obviousness rejection should be withdrawn.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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